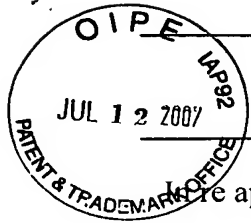10| 772855

CoC

*IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

In re application of:  Alan Welsh Sinclair

Attorney Docket No.:  SDK1P018

Patent:  7,136,973 B2

Issued:  November 14, 2006

Title:  DUAL MEDIA STORAGE DEVICE

# REQUEST FOR CERTIFICATE OF CORRECTION
# OF OFFICE MISTAKE
## (35 U.S.C. §254, 37 CFR §1.322)

Certificate
JUL 1 6 2007
of Correction

Commissioner for Patents
P.O. Box 1450
Alexandria, VA  22313-1450
Attn:  Certificate of Correction

Dear Sir:

Attached is Form PTO-1050 (Certificate of Correction) at least one copy of which is suitable for printing.  The errors together with the exact page and line number where the errors are shown correctly in the application file are as follows:
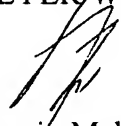
**SPECIFICATION:**

1.     Column 5, line 11, change "receritly" to --recently--.  This appears correctly in the patent application as filed on February 4, 2004 on page 10, paragraph 23, line 3.

2.     Column 8, line 25, add --150 is constantly accessed, there will not be enough time to transfer the data from the-- after "device".  This appears correctly in the patent application as filed on February 4, 2004 on page 16, paragraph 43, line 3.

JUL 1 6 2007

Patentee hereby requests expedited issuance of the Certificate of Correction because the error lies with the Office and because the error is clearly disclosed in the records of the Office. As required for expedited issuance, enclosed is documentation that unequivocally supports the patentee's assertion without needing reference to the patent file wrapper.

It is noted that the above-identified errors were printing errors that apparently occurred during the printing process. Accordingly, it is believed that no fees are due in connection with the filing of this Request for Certificate of Correction. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 500388 (Order No. SDK1P018).

Respectfully submitted,
BEYER WEAVER LLP

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[0022]    Several different advantages can be gained with the improved mass storage device.  In one embodiment, the improved mass storage device can provide for fast system boot and fast application start-up.  Information required by a host system during its boot process, such as operating system and configuration files, can be stored in the flash memory system, with a second copy optionally being stored in the hard drive.  In such a system, the flash memory system can be used as a non-volatile read cache, and its fast random read access characteristics allow much faster system start-up.  This information can initially be identified as being frequently read information and can be copied to the flash memory system during its initial access from the hard drive.  Such information can be protected to prevent it being overwritten by other applications that use the flash memory system in the mass storage device.  Application software files can be treated in the same way to provide fast start-up of applications.

[0023]    In another embodiment, the improved mass storage device can act as a low-power storage device.  The improved mass storage device can use the flash memory system as a read/write cache by maintaining a copy of recently accessed information in the flash memory system, together with a copy of recently written information.  The device can then spin down the magnetic hard disk to reduce power in portable applications and take advantage of the low power characteristics of flash memory, while retaining a high probability of fast response for required information by means of a cache hit in flash memory.

[0024]    Similarly, the improved mass storage device can also provide the advantage of being a shock-tolerant storage device.  Spinning down the magnetic hard disk when in an environment with a risk of high mechanical shock, would take

[0041]    In another embodiment, the improved mass storage device 150 can operate with its flash memory system 205 acting as a write cache.  A cyclic buffer, similar to one previously described for the read cache, can be used to store data supplied from the host bus 155 in parallel with its writing to the hard drive 210.  In this manner, incoming data can be stored in the improved mass storage device 150, allowing the system 100 to complete its write operation sooner than would otherwise be possible if the only mass storage device was a single magnetic hard drive 210.  When data stops being sent over the host system bus 155, the CPU 140 can act as if the data has reached its final destination, even though the improved mass storage device 150 still needs to complete the transfer of data from the flash memory system 205 to the magnetic hard drive 210.  The transfer will typically occur when the mass storage device 150 is not otherwise being used.  However, if the flash memory system 205 has the capability to read and write during a single cycle (e.g., using a dual port memory structure), the transfer can occur during the writing to flash memory system 205.

[0042]    The overall increase in system performance depends upon both the capacity of the flash memory system 205 and how often the improved mass storage device 150 is being accessed.  A small capacity flash that does not qualify as a mass storage device would simply be the equivalent of a flash cache, and would not greatly improve the system performance.  However, as the flash gets bigger, the system performance benefits get more drastic, as shown in FIG. 4A.  The bigger the flash memory system 205, the more data can be stored during a burst of activity.

[0043]    Similarly, FIG. 4B shows that as the improved mass storage device 150 becomes more utilized, the system performance degrades.  If the mass storage device 150 is constantly accessed, there will not be enough time to transfer the data from the

SDK0467.0/SDK1P018/CDT/MEM                    16

(Also Form PT-1050)

# UNITED STATES PATENT AND TRADEMARK OFFICE
# CERTIFICATE OF CORRECTION

PATENT NO.   : 7,136,973 B2                               Page 1 of 1

DATED        : November 14, 2006

INVENTOR(S)  : Alan Welsh Sinclair

    It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

**In the Specification:**

Column 5, line 11, change "receritly" to --recently--.

Column 8, line 25, add --150 is constantly accessed, there will not be enough time to transfer the data from the-- after "device".

MAILING ADDRESS OF SENDER:                               PATENT NO. 7,136,973 B2

**Ramin Mahboubian**                                     No. of Additional Copies
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JUL 16 2007